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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/623,872      | 07/21/2003  | Ai Kondo             | 56232:90            | 5889             |

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EXAMINER

MCLENDON, SANZA L

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1711

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/623,872

**Applicant(s)**

KONDO, AI

**Examiner**

Sanza L. McClendon

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-3, 5-10, 12 and 13 is/are rejected.  
7) ☒ Claim(s) 4 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

1. In response to the Amendment received on May 6, 2005, the examiner has carefully considered the amendments.
2. The Declaration under 37 CFR 1.132 filed May 6, 2005 is insufficient to overcome the rejection of claims 1-3, 5-10 and 12-13 based upon the subsequent rejections as set forth below because: while to Declaration is commensurate in scope for the Ink composition 1 as found on page 45 to page 46, it is not reasonable commensurate in scope for the composition of claim 1. The declaration does not reasonable provide unexpected results for the different composition claimed in the instant claims. Additionally, the declaration does not provide for unexpected results. It shows that one of ordinary skill in the art would have found it obvious to use smaller particle sizes to prevent nozzle clogging among other things. Please refer to the rejects below.

***Response to Arguments***

3. Applicant's arguments with respect to claims 1-10 and 12-13 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC §103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 6-10, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiwara et al (6,166,100) in view of Shimizu et al (4,680,058).

The examiner deems the limitation "for ink-jet recording" appears to be merely a functional limitation does not add a positive limitation to the claim, it provides only for the ability of the ink to function as an ink composition for ink-jet recording. Since the prior art teaches the instantly claimed composition it is deemed to be able to function in the same capacity.

Hiwara et al teaches cationically polymerizable-pigmented compositions. Said compositions comprising (A) a cationically polymerizable binder component and (B) a cationic polymerizing initiator capable of initiating polymerization by irradiation or heat, and (C) a color pigment. The binder component contains at least one resin or compound selected from the group consisting of (A-1) a cationically polymerizable acrylic resin consisting of a copolymer of (a) a (meth) acrylic ester monomer, (b) a polymerizable unsaturated monomer containing polymerizable groups and at least one cationically polymerizable moiety selected from the group consisting of an epoxy group and an oxetane ring, and, optionally, (c) other polymerizable unsaturated monomer, and (A-2) a fatty acid modified epoxy compound containing an aliphatic hydrocarbon group and epoxy group. Said compound (A-1) contains epoxy groups and/or oxetane groups in amounts from 2 to 100 on average per one molecule. In addition, Hiwara et al teaches the composition may contain other cationically polymerizable compounds (A-3) as an optional component. A-3 may include epoxy compounds, vinyl compounds, bicycloorthoester compounds, spiroorthocarbonate compounds, and oxetane compounds, preferably epoxy and oxetane compounds are used from the standpoint of physical properties and curing properties. In the first embodiment of the Hiwara et al composition comprises a composition containing (A-1) and (A-3) in amounts from 10-90% by weight of (A-1) and 10-90% by weight have, as well as, the cationic initiator (B) and colored pigment (C). The initiator compound (B) includes cationic polymerization initiators that form an acid capable of initiating cationic polymerization upon exposure to radiation or heat. This anticipates claim 6. Other initiators can be found in column 14. The colored pigment may include a white pigment, such as titanium white, zinc oxide, and the like. This is deemed to anticipate claim 8-9. Said pigment can be found in amounts from 1-500 parts by weight in the composition. This amount appears to anticipate at least one of applicant's amounts in claim 7. Applicant's instant invention of claims 1-3 appear to be anticipated by Hiwara et al because Hiwara et al teaches compositions comprising an oxetane containing compound (A-1) in amounts from 10 to 90% by weight, wherein 65-90% anticipate the instant claims, a white pigments

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(titanium dioxide) in amounts from at least 1-500 parts by weight or in amounts of at least 22% by weight as seen in example 1 (Table 1), and an epoxy compound and/or vinyl ether compound (A-3).

Hiwara et al does not expressly teach a particle size for the pigments within the defined composition, however Hirawa et al teaches said coating compositions could be coated by spraying or printing methods.

Shimizu et al teaches white ink compositions for ink-jet printing. Shimizu et al teaches using white pigments having particle sizes of less than 3 microns, preferably in the range from 0.5 to 0.7 microns. This particles size is recommended for dispersion stability, redispersibility, print stability, and nozzle clogging prevention.

Hiwara et al and Shimizu et al are analogous art because they are from the same field of endeavor that is the art of ink-jet printing white ink composition.

Therefore it would have been obvious for an artisan of ordinary skill in the art to use the claimed particles sizes in compositions as taught by Hiwara et al to take obtain the advantages as taught by secondary reference to Shimizu et al in the absence of evidence to the contrary and/or unexpected results.

Hiwara et al is described in an above rejection. Hiwara et al does not expressly teach a substantially solventless composition, using an organic white pigment, or the ink having a viscosity as defined in claim 13. Hiwara et al discloses that said composition can be cured by irradiation and goes on to disclose in the case where a solvent is used, irradiation is preferably carried out after the solvent has been removed. The examiner deems that one of ordinary skill in the art using said disclosure at the time of invention would have been able to determine that a solvent is optional and not necessary to prepare said ink composition as taught by Hiwara et al in the absence of evidence to the contrary and/or unexpected results. With regards to claim 13, the Patent and Trademark Office is not equipped to conduct experimentation in order to determine whether Applicant's composition differs and, if so, to what extent, from the discussed reference. Therefore, with the showing of the reference, the burden of establishing non-obviousness by objective evidence is shifted to the Applicants. In the alternative it would have been within the ability of an ordinarily skilled artisan to determine a suitable viscosity, such as found in claim 13, for coating a substrate with said ink composition as taught by Hiwara et al. The motivation would have been to obtain an ink coating composition with good color development properties and good flowability in the absence of unexpected results and/or evidence to the contrary. Hiwara et al does not expressly teach using organic white pigments, however Hiwara et al teaches using inorganic and organic colored pigments. Therefore the examiner deems that an artisan of ordinary skill in the art at the time of the invention could have chosen an organic white pigment for use in the composition as taught by Hiwara et al,

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motivated by such things, as cost-effective reasons and/or accessibility to said pigments in the absence of unexpected results and/or evidence to the contrary.

6. Claims 1-2, 5-6, 8-9 and 12 are rejected under 35 U.S.C. 103(a) as obvious over Watanabe et al (6,783,840) in view Shimizu et al (4,680,058).

Watanabe et al teaches resist ink compositions comprising a compound (a) having at least one oxetanyl group and at least one epoxy group in the same molecule and a compound (b) capable of initiating cationic polymerization under irradiation by active energy rays and/or heat. Said compound (b) once exposed to irradiation and/or heat generates an acid capable of initiating the cationic polymerization, also called an acid generator. In addition to (a) and (b) the composition can comprise a compound (c) having at least one epoxy and no oxetane groups in the molecule, a compound (d) having at least one oxetanyl groups and no epoxy groups, a compound (e) having at least one radical polymerizable group in the molecule, a photo-racial polymerization compound (f), and an alkali-soluble compound (g). Compound (b) can be found in amounts from 1 to 20 parts by mass, per 100 parts by mass of the blended amount of compound (a). Compound (c) can be found in amounts from 10 to 500 parts by mass, per 100 parts by mass of compound (a). Compound (d) can be found in amounts from 5 to 200 parts by mass, per 100 parts by mass of (a). Compound (e) can be found in amounts from 5 to 500 parts by mass, per 100 parts by mass of (a). Compound (f) can be used in amounts from 0.007 to 0.5 moles, based on 1 equivalent amount of the polymerizable groups in (e). Compound (g) can be found in amounts from 5 to 2000 parts by mass, per 100 parts by mass of (a). Watanabe et al teaches that said composition can be solventless—see column 10, lines 46-47. This is deemed to anticipate claim 12. In addition, said composition can be comprise other adjuvant, such as colorants, wherein titanium dioxide is listed—see column 11, line 24. Per example 7, Watanabe et al teaches an ink composition comprising an (a) epoxy/oxetane compound, (b) an acid generator, (c) an epoxy compound, (d) an oxetane compound, (e) an acrylate compound, (f) a free radical polymerization initiator, (g) an alkali soluble resin, a sensitizer, a filler, and a colorant, wherein it is deemed that a white pigment is exchangeable with the green pigment to prepare a white instead of green ink.

Watanabe et al does not expressly teach a particle size for the pigments within the defined composition, however Watanabe et al teaches said coating compositions could be coated by spraying or printing methods.

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Shimizu et al teaches white ink compositions for ink-jet printing. Shimizu et al teaches using white pigments having particle sizes of less than 3 microns, preferably in the range from 0.5 to 0.7 microns. This particles size is recommended for dispersion stability, redispersibility, print stability, and nozzle clogging prevention.

Watanabe et al and Shimizu et al are analogous art because they are from the same field of endeavor that is the art of ink-jet printing white ink composition.

Therefore it would have been obvious for an artisan of ordinary skill in the art to use the claimed particles sizes in compositions as taught by Hiwara et al to take obtain the advantages as taught by secondary reference to Shimizu et al in the absence of evidence to the contrary and/or unexpected results.

The examiner deems the limitation "for ink-jet recording" appears to be merely a functional limitation does not add a positive limitation to the claim, it provides only for the ability of the ink to function as an ink composition for ink-jet recording. Since the prior art teaches the instantly claimed composition it is deemed to be able to function in the same capacity, especially since Watanabe et al teaches said composition can be applied by spray and electrostatic coating methods.

#### ***Allowable Subject Matter***

7. Claims 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The limitation of claim 4 is not expressly taught and/or fairly suggested in an ink composition as defined in claim 1.

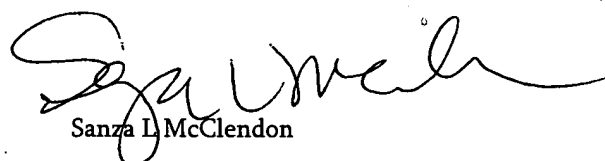
#### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L. McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sanza L. McClendon

Examiner

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